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1882-5299

*Britain**Metal Bureau**1882*
(L. SHREY)A.D. 1882. Nov. 6. N° 5299.
HOPE'S SPECIFICATION.*Several iron disks from the, emulsion
by magnetic separator - the iron disks
by levitation*

FIG. 1.

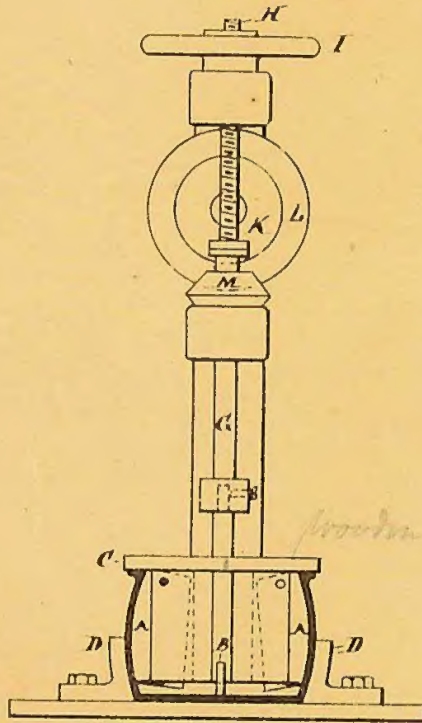


FIG. 2.

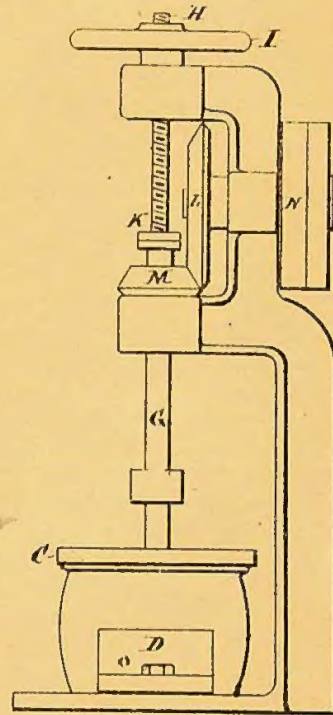


FIG. 4.

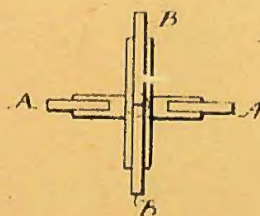
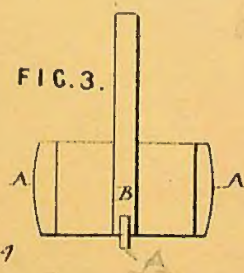


FIG. 3.

*The rubber peg and
are made of
lead, tin, emulsion
wood iron leather etc.
gent with rubber
etc. leather.**Puls coarse emulsion**Fills the kettle with coarse
emulsion.*

*G. P.
Patent Office*

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A.D. 1882, 6th NOVEMBER. N° 5299. *D*  
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Finishing the Interior of Hollow Ware.

LETTERS PATENT to John Vernon Hope of Wednesbury in the county of Stafford for an Invention of IMPROVEMENTS IN AND APPERTAINING TO FINISHING THE INTERIOR OF HOLLOW WARE"

PROVISIONAL SPECIFICATION left by the said John Vernon Hope at the Office of the Commissioners of Patents on the 6th November 1882.

JOHN VERNON HOPE of Wednesbury in the county of Stafford IMPROVEMENTS IN AND APPERTAINING TO FINISHING THE INTERIOR OF HOLLOW-WARE

- 5 Hollow-ware after casting is usually much too rough to be tinned or enamelled It therefore requires turning and sometimes also annealing before turning so as to adapt it to turning or enamelling This is expensive
Now my invention is designed to avoid this labour and consists in grinding the interior of the Hollow-ware, and also in apparatus for grinding the same.
- 10 The apparatus consists of a spindle with projecting stirrer or stirrers These stirrers rotate with great rapidity inside the hollow ware. I insert into the hollow-ware hard abrasive material such as coarse corundum This driven round by the stirrers flies outwards by centrifugal force and rapidly grinds or polishes the interior of the hollow-ware
- 15 The article being sufficiently ground is emptied and the corundum used in a fresh pot. When it gets too contaminated with iron dust it can be at once separated from that impurity by a magnetic separator and the impalpable dust from time to time can be separated by levigation
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Hope's Improvements in Finishing the Interior of Hollow Ware.

SPECIFICATION in pursuance of the conditions of the Letters Patent filed by the said John Vernon Hope in the Great Seal Patent Office on the 5th May 1883.

JOHN VERNON HOPE of Wednesbury in the County of Stafford "IMPROVEMENTS IN AND APPERTAINING TO FINISHING THE INTERIOR OF HOLLOW-WARE" 5

Hollow-ware after casting is usually much too rough to be tinned or enamelled. It therefore requires turning and sometimes also annealing before turning so as to adapt it to turning or enamelling. This is expensive.

Now my invention is designed to avoid this labour and consists in grinding the interior of the Hollow-ware, and also in apparatus for grinding the same. 10

The apparatus consists of a spindle with projecting stirrer or stirrers. These stirrers rotate with great rapidity inside the hollow-ware. I insert into the hollow-ware hard abrasive material such as coarse corundum. This driven round by the stirrers flies outwards by centrifugal force and rapidly grinds or polishes the interior of the hollow-ware. 15

The article being sufficiently ground is emptied and the corundum used in a fresh pot. When it gets too contaminated with iron dust it can be at once separated from that impurity by a magnetic separator and the impalpable dust from time to time can be separated by levigation.

In the drawings Fig. 1 shows a front view of machine with pot in section. 20

Fig. 2—side elevation of machine with pot in position.

Fig. 3—elevation of tool. Fig. 4—plan of same.

In these A are composition rubbers fitted into grooves in the tool E and projecting both sideways and at bottom so that the wrought iron wings of the tool do not come in contact with the metal to be polished or glazed. C is a 25 wooden lid placed over the top and formed in two halves with a hole between for the tool spindle to rise up through. D are dogs for holding the hollow-ware in place E as already stated is the wrought iron tool formed at the end of spindle G H is a screw for elevating or depressing the tool to the required amount and raising it out of the pot. It is fastened to the spindle as in drilling machines by 30 a socket joint at K. L M are bevel gear wheels for driving the machine being propelled by belt pulley N on the same shaft. The rubbers can if desirable be held by bolts at P as shown but this is not necessary and so long as they can be so adjusted to their slots as to fly out when whirled round yet not fall out or be scraped out when the tool is lifted clear of a pot it is better to do without said 35 bolts. I prefer with ordinary pots of about 9 inches diameter to run the spindle at 500 revolutions a minute. For other sizes an inverse proportionate speed. The stirrers or rubbers can be made of almost any tough material which will stand the frictional heat. I have tried lead, tin, emery composition, wood, iron, leather stiffened with metal or wooden frame and sole leather. The emery has the 40 advantage that it is itself an abrasive and if it be made with one of the mineral cementing processes now used for emery wheels or with any ordinary cementing medium at present used that will not melt with the friction applied it is as good as any. Leather lasts longest but is the most expensive. Probably however the best plan will be found to be for bottom stirrers or the bottoms of the stirrers, 45 which often get denuded of sand by the centrifugal force to be made of the emery composition; and side stirrers or the upper part of the stirrers to be made of wood with the length of the grain running horizontally, or of leather.

Having now described my invention and the best mode known to me of carrying it into effect I wish it to be understood that what I claim as my invention is the 50

Hope's Improvements in Finishing the Interior of Hollow Ware.

method of and also the apparatus for finishing hollow-ware substantially as herein described in which centrifugal force generated by the rapid revolution of the abrasive material causes the latter to bear with force against the side surface and the bottoms are polished by the rotation of abrasive material in contact
5 with them.

In witness whereof I the said John Vernon Hope have hereunto set my hand and seal this fifth day of January in the year of our Lord one thousand eight hundred and eighty three,

JOHN VERNON HOPE (L.S.)

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Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

1883.